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## A NEW AND EXTRAORDINARY GENUS OF THE DIPLOPOD FAMILY, POLYDESMIDÆ, FROM BRITISH GUIANA

BY FILIPPO SILVESTRI

While examining a collection of diplopods from British Guiana belonging to The American Museum of Natural History, kindly submitted to me for study by my friend and colleague, Dr. Roy W. Miner, Curator of Living Invertebrates, my attention was attracted by two specimens of Polydesmidæ which, upon closer examination, revealed very extraordinary characters differing from all the other known genera of the group, and, because of the extruded stigmata, from all hitherto described diplopods, as well. Therefore I describe these specimens as representative of a new species, new genus, and new subfamily.

The summarized characters follow.

### **PANDIRODESMUS**, new genus

Figures 1 to 5

Corpus capite, collo, valvulis analibus et segmentis aliis 19 constitutum, trunci segmentis secundo et tertio quam cetera angustioribus, decimo primo ad decimo tertio latioribus et posticis attenuatis, nec in globum nec in spiram (vel parum) contractile.

Derma molle (an semper?).

Caput manifestum, mandibularum stipitibus inclusis quam collum fere duplo latiore fronte bene convexa, clypeo profunde tridentato.

Antennæ breves articulo primo brevi, secundo quintum longitudine æquante, tertio quam secundus aliquantum brevior et quam quartus paulum longior, articulo sexto quam quintus parum magis quam dimidio brevior et quam septimus c.  $\frac{1}{2}$  longior, setis et sensillis vide Fig. 2c.

Mandibulæ (Fig. 2e et f) stipitibus<sup>1</sup> magnis, partis præmandibularis dente apicali externo acuto laminam dentatam haud superante, lamina dentate dente acuto et dentibus duobus minoribus lobuliformibus instructa, laminis pectinatis 6, mola excavata cercine supero arcuato et lamina cercini superposita et idem interne aliquantum superante instructa.

Hypostoma (Fig. 2b et g) palpulis maxillaribus externis elongatis, quorum externus quam internus angustior est, palpulo maxillari interno brevi apice subconico.

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<sup>1</sup>Silvestri, F., 'Classis Diplopoda,' I, Anatome, Portici, 1903; see also, Berlese, 'Acari Myriopoda et Scorpiones', see also, 1916, Contribuzione alla conoscenza degli Stemmuloidea (Diplopoda), Boll. Lab. Zool. Sc. Agr. Portici, X, pp. 288-312.

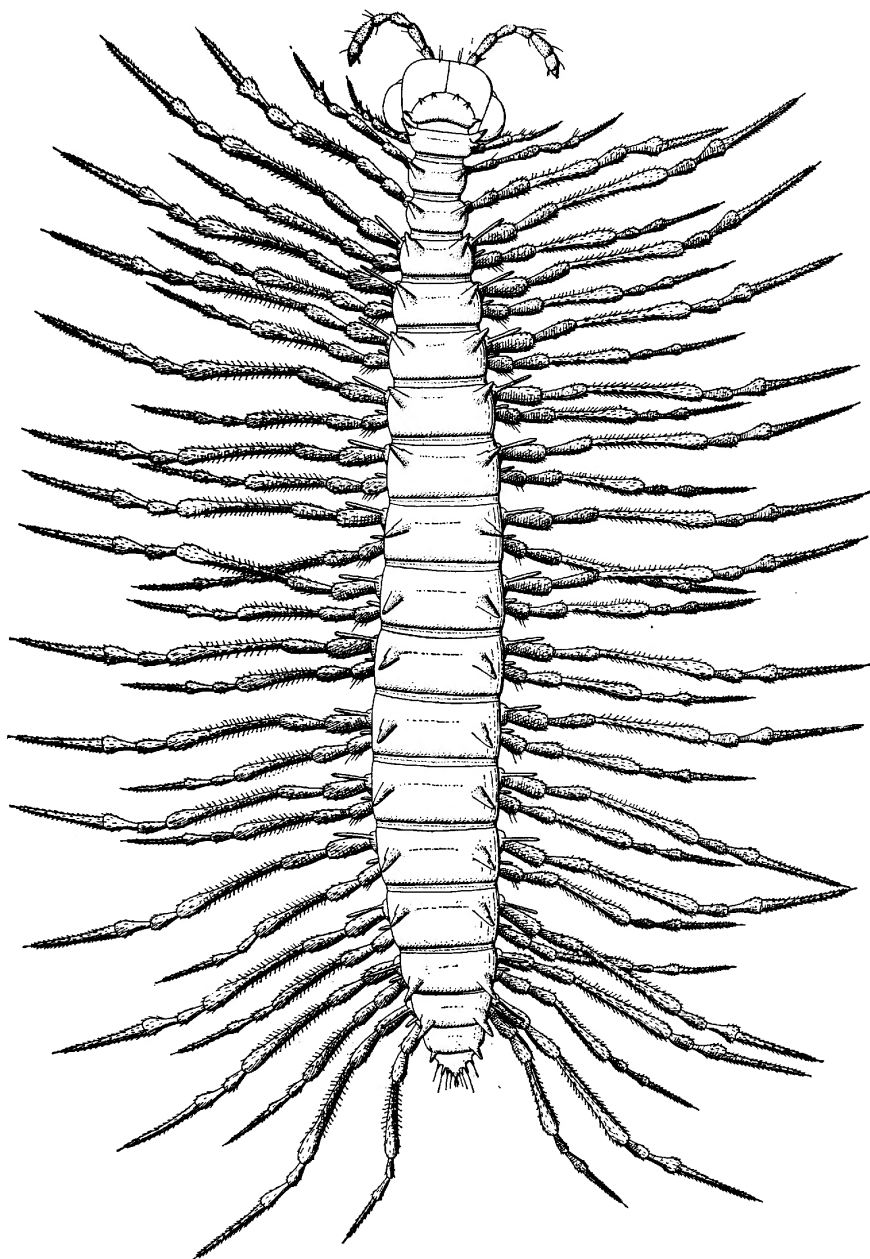


Fig. 1. *Pandiroidesmus disparipes*: entire animal, dorsal view. Enlarged.

Collum subsemiellipticum, convexitate antica, parum magis quam duplo latius quam longius tuberculis conicis 3+3 instructum, quorum submedianum et sublaterale breviora, lateralia parum longiora sunt.

Trunci segmenta a primo ad decimum octavum inclusum metazonis utrimque processu conico supero sublaterali auctis et carinis destitutis, metazona tergiti primi etiam parte laterali antica extrorsum et antrorsum cornus instar elongata. Segmentum primum processu ventrali laterali postico subcylindraceo etiam instructum est et sterno libero; segmentum secundum sterno transversali lato, breviori; segmentum tertium sterno perlato lateraliter magis quam metazonæ parum producto; sterna cetera perlata et ad basim pedum paris anterioris metazonarum libellam lateralem parum producta et ad basim pedum paris posterioris metazonarum libellam lateralem fere attingentia sunt.

Stigmata haud fossulæ instar sunt sed in segmento tertio tubuli instar brevissimi cylindracei super sterni partis sublateralis antica sese aperientes et a segmento quarto ad decimo-octavum tubuli instar vix subconici longiusculi supra pedum basim prominentis et ad pedum paris antici extrorsum et sursum vergentes, ad pedum pars postici extrorsum et parum deorsum vergentes.

Metazonorum limbus adiectus (Fig. 3g) mm. 0.156 longus, laminaris longitudinaliter crebre sulcatus et ad mediam longitudinem irregulariter aciculis setiformibus brevibus quam limbi margo posticus brevioribus instructus.

Pedes omnes 7-articulati, primi paris breves tenues, articulo primo quam secundus parum brevior, secundi paris quam primi aliquantum longiores articulo primo brevior, tertii paris quam secundi aliquantum longiores, quarti paris vel segmenti quarti primi paris quam tertii paris aliquantum longiores, quinti paris vel secundi paris segmenti quarti quam quinti c.  $\frac{1}{2}$  breviores et segmentorum sequentium omnium pedibus paris antici quam postici similiter longioribus; pedes a tertio pare articulo secundo quam primus aliquantum longior, articulo tertio quam primus et secundus simul sumpti longior et quam sextus etiam longior, articulo quarto quam quintus parum brevior, articulo quinto apice dilatato et tuberculo cylindraceo supero trichobotrium brevem gerente instructo, articulo sexto gradatim attenuato apice setis nonnullis prætarsum tractu longo superantibus instructo, articulo ultimo (prætarso) unguiformi perbrevis attenuato, parum arcuato. Pedes omnes setosi, setis maxima pro parte (tarsi parte distali excepta) apice plus minusve ramuloso ut *f-i*, Fig. 4, demonstrant.

Pori repugnatori in segmentis 4, 6, 8, 9, 11, 12, 14-18 (=5, 7, 9, 10, 12, 13, 15-19 Auctorum) super incisionem ad longitudinem mediam anticam processus conici dorsualis sese aperientes.

Segmentum ultimum (Fig. 5) circumlitione supera subtriangulari apice parum elongato subacuto utrimque tuberculis elongatis setiferis 4+4, apice ipso setis consuetis inferis quatuor instructo.

Lamina subanalis brevis, subtriangularis tuberculis setigeris 1+1; valvulæ anales paulum marginatæ tuberculis setigeris 2+2.

Mas ignotus.

TYPE.—*Pandirodesmus disparipes*, new species.

OBSERVATION.—This genus is distinguished among all the genera of the family Polydesmidae (the suborder or order Polydesmoidea of authors) especially by the prominent tubiform stigmata on each segment begin-

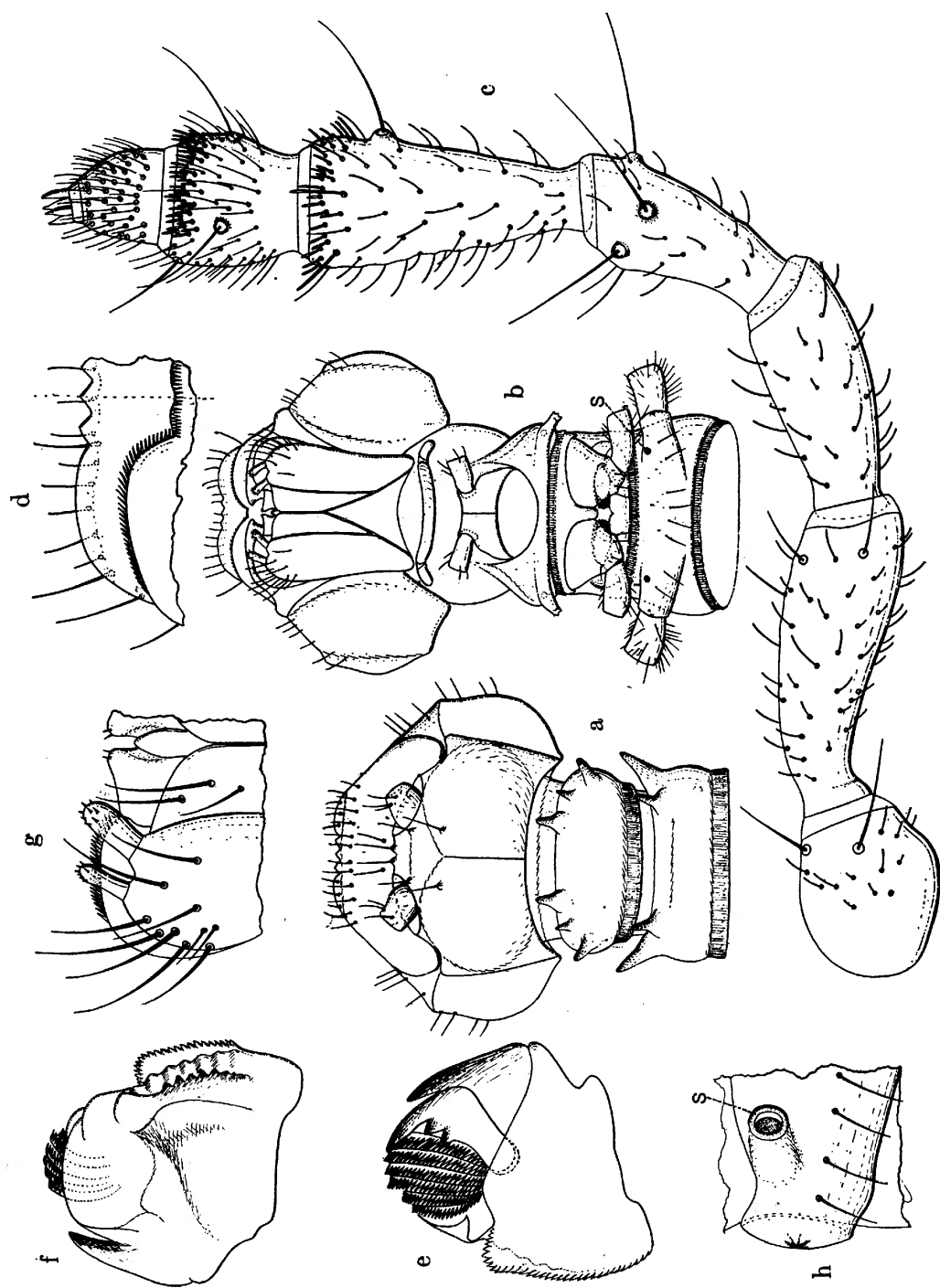


Fig. 2.

Fig. 2. *Pandirodesmus disparipes*: *a*, head, collum, and first segment of trunk, dorsal view; *b*, anterior part of body as far as the third segment of the trunk, including the first joint of the legs, ventral view; *c*, antenna; *d*, clypeus, ventral view; *e*, præmandibula, dorsal view; *f*, præmandibula, ventral view; *g*, one half of hypostoma, distal portion; *h*, one half of third segment, ventral side; *S*, stigma.

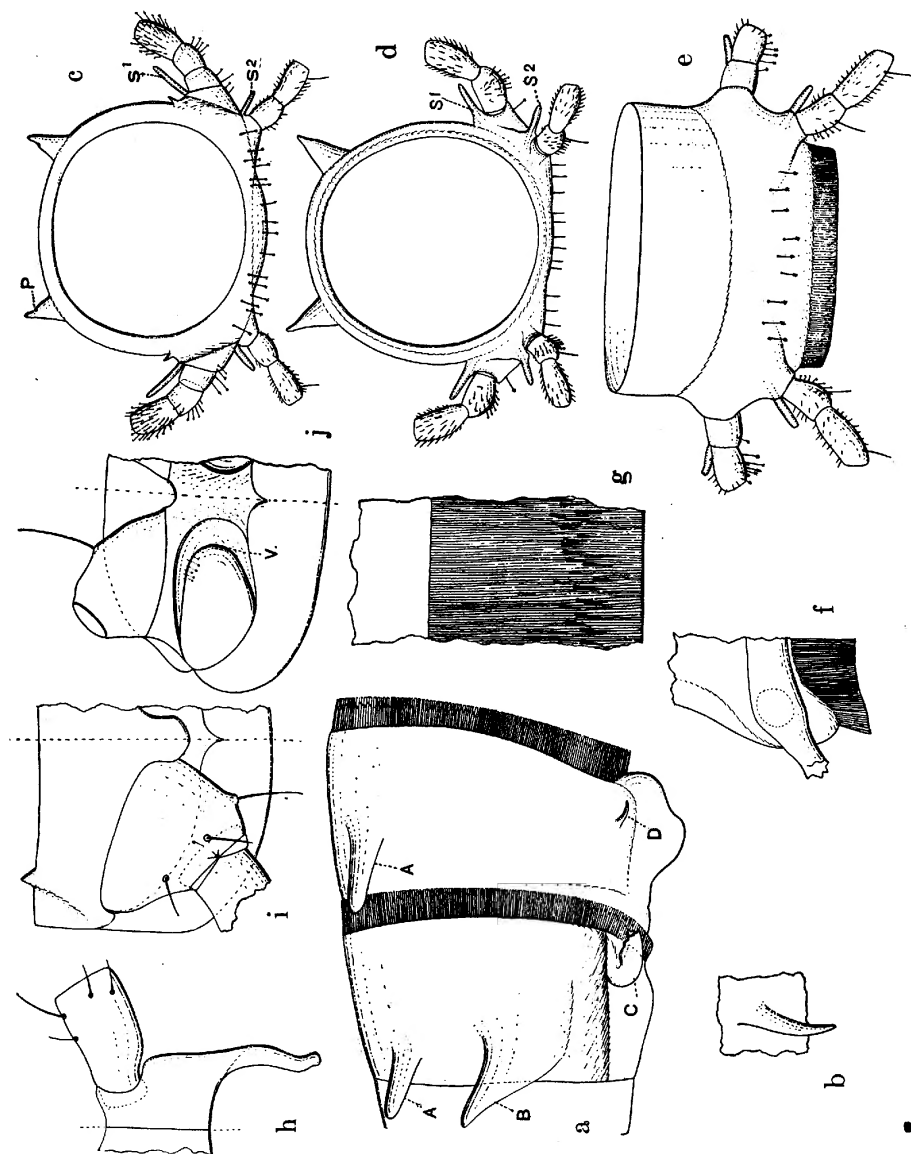
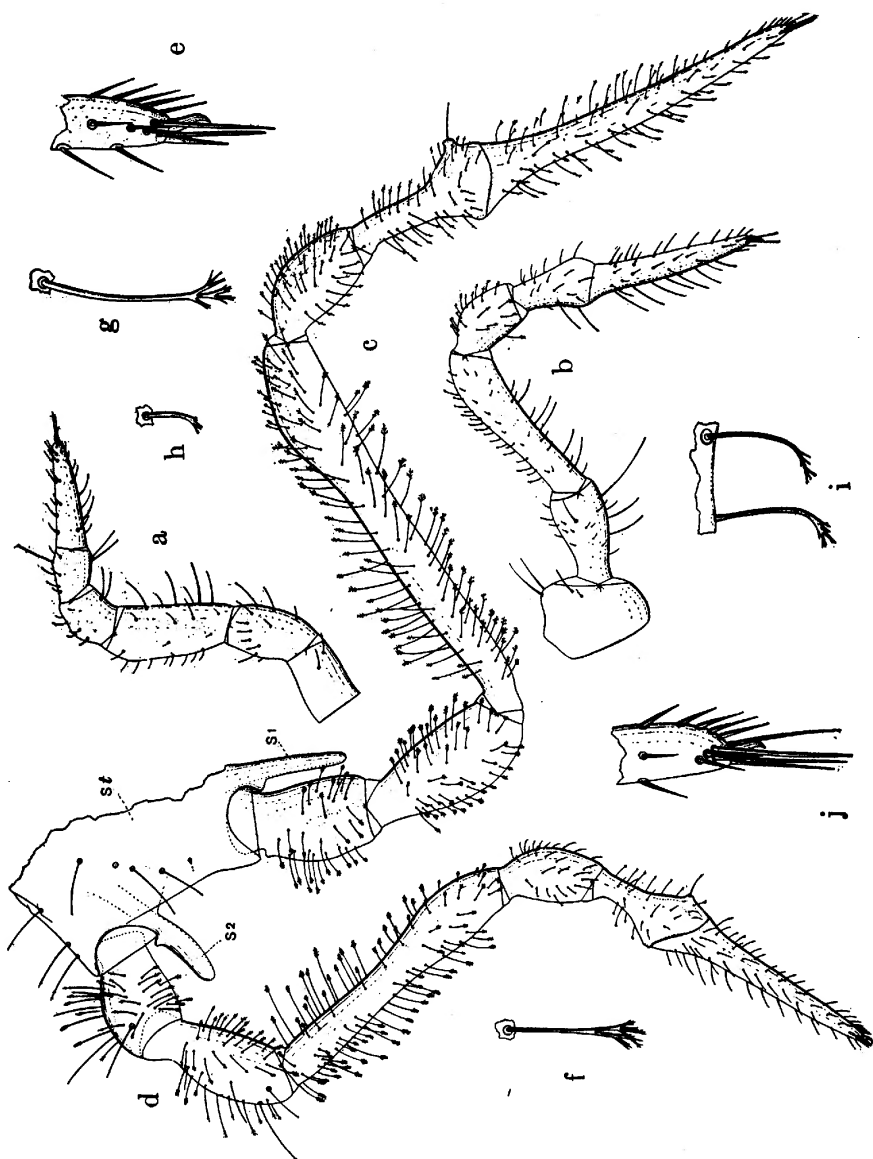


Fig. 3.

Fig. 3. *Pandirodesmus disparipes*; *a*, first and second segments of trunk, viewed laterally; *A*, dorsal sublateral process of the metazona; *B*, dorsal lateral process; *C*, ventral lateral process of the first trunk segment; *D*, ventral lateral process of the second trunk segment; *b*, ventral lateral process of the second trunk segment, more highly magnified; *c*, twelfth segment viewed anteriorly; *P*, repugnatorial pore; *S*<sup>1</sup>, anterior stigma; *S*<sup>2</sup>, posterior stigma; *d*, the same segment viewed posteriorly; *e*, the same segment viewed ventrally; *f*, posterior lateral ventral portion of the first trunk segment; *g*, posterior part of metazona showing whole adjacent border; *h*, sternum of first trunk segment and first joint of legs; *i*, half of ventral part of second trunk segment with proximal part of legs turned backward; *j*, first joint of same legs turned forward; *V*, vulva.



**Fig. 4.**



Fig. 4. *Pandirodesmus disparipes*: *a*, leg of first pair; *b*, leg of second pair; *c*, leg of the anterior pair of the tenth segment; *d*, leg of the posterior pair of the tenth segment with the sternal plate; *ST*, lateral part of the sternum; *S*<sup>1</sup> and *S*<sup>2</sup>, anterior and posterior stigmas of the tarsus; *e*, apex of the tarsus and the pretarsus of the anterior pair of legs of the tenth segment; *f*, inferior seta of the second joint of one of the same legs; *g*, inferior seta of the third joint of the same leg; *h*, dorsal seta of the fourth joint of the same leg; *i*, inferior seta of the proximal part of the sixth joint of the same leg; *j*, apex of the tarsus and the pretarsus of the posterior pair of legs of the tenth segment.

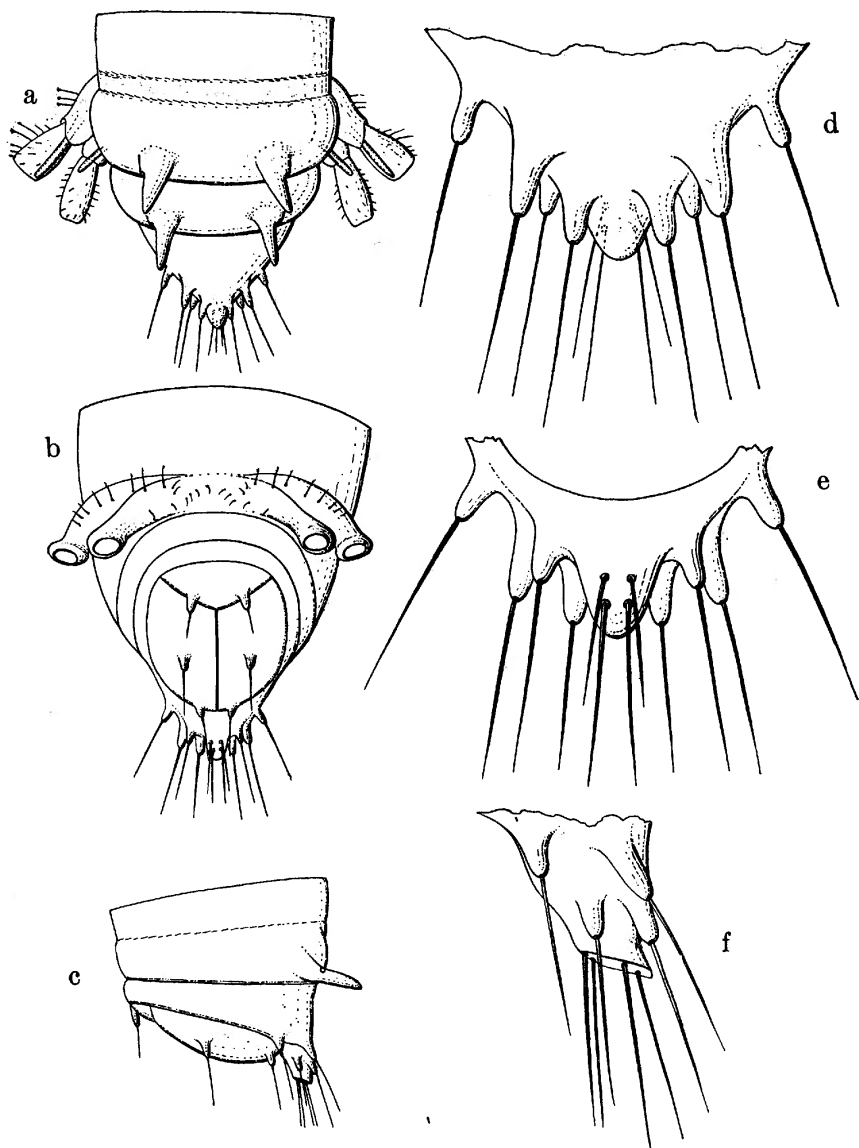


Fig. 5. *Pandirodesmus disparipes*: a, posterior part of body with the first joints of the penultimate and ultimate pair of legs, dorsal view; b, the same, ventral view, legs excluded; c, the two posterior segments with anal valves, viewed laterally; d, e, f, caudal portion of body, dorsal view, and also viewed ventrally and laterally (much magnified).

ning with the fourth; by the anterior pair of feet on each segment, beginning with the fourth, being longer than the posterior pair on the same segment; and by the fact that they arise more laterally than in other genera. Because of these unusually distinctive characters, this genus is hereby ascribed to a new subfamily to be known as **Pandirodesminæ**.

**Pandirodesmus disparipes**, new species

Corpus totum terreo-isabellinum.

Long. corporis mm. 13, lat. capitis (cum mandibulis) 1.85, long., antennarum 2.20, lat. colli 1.10, lat. trunci segmenti secundi metazonæ 1.20, quarti 1.30, decimi primi 2.10, long. processus dorsualis segmenti secundi 0.45, quarti 0.52, decimi primi 0.40, decimi octavi 0.27, pedum primi paris long. 1.45, secundi paris 2.10, tertii paris 4, quarti paris 4.10, quinti paris 3, long. tubuli stigmatici antici (a segmento quarto) 0.40, postici 0.32.

Notis ceteris vide generis descriptionem et figuras.

LOCALITY.—Kamakusa, British Guiana; collected by Herbert Lang.

TYPE.—Cat. No. A. M. N. H. 6482, the adult female described with body broken into three parts.

PARATYPE.—Cat. No. A. M. N. H. 6483, a young female having a segment less than the adult and 10 mm. in length.

NOTE.—The scarcity of the material has not permitted a more detailed study of this very singular polydesmid, which is remarkable because of tubiform stigmata and the different length of the legs on each segment beginning with the fourth, and for the different insertion of the same. The structure of the apical part of the tarsus and of the pretarsus is very peculiar, the latter being very small and surpassed greatly in length by the apical setæ of the tarsus, but this structure is present in the legs of *Trachelodesmus* Peters also. Until we know the conditions of the place where this strange diplopod lives, we cannot explain in a right manner the structures presented by it, but I suspect that it lives in marshes or on trees among very wet arboreal vegetation, where ventrally opening stigmata would not be adapted for respiration. The structure of the pretarsus indicates, I think, that the animal is not fitted for walking on hard soil.

I hope that after the publication of this note, collectors of arthropods in British Guiana and nearby regions will pay some attention to these creatures, in order to ascertain their habitat and to collect enough material for a complete morphological study.

SYSTEMATIC POSITION OF PANDIRODESMINÆ

This group of Polydesmidæ is closely related to the *Trachelodesminæ* with *Trachelodesmus* Peters as type, having a similarity in the

large sterna and in the form of the apical part of the tarsus and of the pretarsus, but there still remain enormous differences in the fundamental characters given above between the Pandirodesminæ and the Trachelodesminæ. Had I followed the present fashion of most living diplopodologists, I should have felt obliged to erect a family, at least, for this group, but as I have become very conservative in the matter of classification, for the present I prefer to consider the Polydesmidæ as a unique family, though other authors would make it of ordinal or subordinal rank. There is no doubt that the Pandirodesminæ represent an isolated group in the family, well worthy of being considered a distinct subfamily. It is noteworthy that so strange a form of polydesmid has kept the most generalized formula of the disposition of the pori repugnatori.